DESCRIPTION

PRODUCT COVERED:

USR, CNR - Component, Switches Industrial Control Solid State Relays, Model No. WG, followed by 280, 480 or 660, followed by D, followed by 10, 25, 40, 45, 50, 75, 90, 110 or 125, followed by R or Z, may be followed by –1 through –999.

GENERAL:

These devices are open type solid state (thyristor output connected in anti-parallel) devices, intended to be chassis mounted.

Devices are for use in a Pollution Degree 2 environment if not provided with potting compound.

ELECTRICAL RATINGS:

Input:

Control Voltage: 3-32 Vdc.

Output: (General Use)

Voltage:	24-600 V ac	
Current:	Max. 10 A	(Suffix 10)
	Max. 25 A	(Suffix 25)
	Max. 40 A	(Suffix 40)
	Max. 45 A	(Suffix 45)
	Max. 50 A	(Suffix 50)
	Max. 75 A	(Suffix 75)
	Max. 90 A	(Suffix 90)
	Max. 110 A	(Suffix 110)
	Max. 125 A	(Suffix 125)

Note: Devices are only suitable for use in a maximum surrounding air temperature of 40 °C.

NOMENCLATURE BREAKDOWN:

WG	280	D	25	R	123
I	II	III	IV	V	VI

I –	Manufacturer basic series designation:	WG		
II –	Designates voltage rating: (max. value voltage phase to ground)	280 - 280 Vac 480 - 480 Vac 660 - 600 Vac	(600 blocking) (1200 blocking) (1600 blocking)	47/63 Hz 47/63 Hz 47/63 Hz
III -	Control voltage Rating:	D - 3 to 32 Vdc		
IV -	Load current rating	10 - 10 A 25 - 25 A 40 - 40 A 45 - 45 A 50 - 50 A 75 - 75 A 90 – 90 A 110 - 110 A 125 – 125 A		
V -	Switching	Z - Zero voltage switching R - Random switching		
VI -	Manufacturer's identification	-1 through –999		

ENGINEERING CONSIDERATIONS (NOT FOR FIELD REPRESENTATIVE'S USE):

CNR - Indicates investigation to Canadian National Standards C22.2 No. 14 – 95.

USR - Indicates investigation to U.S. National Standard UL 508.

Note:

CNR = Canadian National Standards – Recognized.
USR = United States Standards – Recognized.

Use - For use only in products where the acceptability of the combination is determined by Underwriters Laboratories Inc.

CONDITIONS OF ACCEPTABILITY:

1. These devices should be used within their Recognized ratings as specified above.

2. These devices should be mounted in an enclosure having adequate strength and thickness.

3. When open type devices are mounted in enclosures, it should be determined if tests need to be repeated, giving particular attention to heating tests. The device, type WG660D125Z was tested on an aluminum heat sink, Part no. WG K4/160L (0.3 K/W) with an air flow of 50 m3/hours. If a different heat sink is used in the end application, consideration should be given to repeating the heating test.

   Following min. values should be required as min. value for the rated currents at a surrounding air temperature of max. 40°C:

Type WG xxx x 10 x xxxx -	3.5 K/W
Type WG xxx x 25 x xxxx -	1.6 K/W
Type WG xxx x 40 x xxxx -	0.75 K/W
Type WG xxx x 45 x xxxx -	0.70 K/W
Type WG xxx x 50 x xxxx -	0.70 K/W
Type WG xxx x 75 x xxxx -	0.60 K/W
Type WG xxx x 90 x xxxx -	0.55 K/W
Type WG xxx x 110 x xxxx -	0.45 K/W
Type WG xxx x 125 x xxxx -	0.40 K/W

   x - denotes model differences not affecting the current ratings.

4. The terminals are to be factory wired only and the suitability of the connection (including spacings between factory connectors) shall be determined in the end use.

5. The output wave-form of this device may not be sinusoidal under certain inductive loading conditions and the effect of this output wave on the intended equipment must be determined in the end use application.

6. The input voltage ratings are considered to be absolute minimum and maximum values.

7. Spacings at factory wiring terminals of not less than 12.7 mm (1/2 in) should be maintained between any uninsulated live part and the walls of a metal enclosure.

CONSTRUCTION DETAILS:

The product shall be constructed in accordance with the following description.

Spacings for all devices are evaluated according UL508, 17th Edition, table 36.1, column A, for devices used for General industrial control equipment. The following min. spacings are provided:

	Potential in Volts	301 – 600
Between any uninsulated live parts and an uninsulated live part of opposite polarity, uninsulated grounded part other than the enclosure or exposed metal parts.	Through air or oil	9.5 mm
	Over surface	12.7 mm
Between any uninsulated live part and the walls of a metal enclosure including fittings for conduit or armored cable	Shortest distance	12.7 mm

Spacings at PWB -- Due to hermetically sealing with a potting compound, with a min. thickness of 0.8 mm, no spacings are required according UL 1557 (Electrically Isolated Semiconductor Devices) or, if the PWB is not provided with a sealing, following spacings are applicable:

Table 6.2 of UL840 Second Edition

Min acceptable creepage distances on printed wiring boards

Operating voltage, volts ac rms or dc	Min. creepage, mm Pollution degree 2
10-50	0.04
63	0.63
80	0.1
100	0.16
125	0.25
160	0.4
200	0.63
250	1.0
280	1.3
480	2.4
600	3.1

Tolerances - Unless specified otherwise, all indicated dimensions are nominal.

Corrosion Protection - All parts are of corrosion resistant material or are plated or painted as corrosion protection.

Printed Wiring Board – any R/C (ZPMV2) rated min. UL94-V2, min. 105°C and suitable for direct support of live parts. Solder temperatures and dwell times can be verified in the current Recognized Component Directory.

MARKING:

Ink-stamped on cover, mylar label, or die-stamped on metal plate, permanently secured to cover, designating:

1. Recognized company name or trademark,
2. Catalog number,
3. Input / output ratings,
4. Only for use in a pollution degree 2 environment, (devices without potting compound) (@)
5. Installation and wiring instructions, (@)
6. The recognized component mark for USA and Canada and
7. Suitable for a max. surrounding air temperature of 40°C.

@ = Marking may be provided on the device or instruction manual shipped with the device.